

AMENDMENT TO THE CLAIMS

What is claimed is:

1. (Currently Amended) An apparatus for spin forming a portion of a workpiece where the formed portion has a formed axis that is non-coaxial with the non-processed axis of the workpiece, comprising:

a carrier rotatable about a spin axis;

at least a first roller and a second roller operatively supported on said carrier, said first roller being radially and axially offset from said second roller, said first and second rollers radially movable toward and away from the spin axis;

a rotational drive mechanism having an axial drive shaft for spinning said carrier about a spin axis;

a radial drive mechanism for radially translating said first roller and said second roller toward and away from the spin axis, wherein said radial drive mechanism further comprising:

a shaft supported coaxially by said axial drive shaft, radially inboard of said first and second rollers, for guided movement along said spin axis;

an actuator for moving said shaft along said drive shaft coaxial to said spin axis; and

a translation mechanism operable between said shaft and rollers for translating the axial motion of said shaft into radial motion of said rollers;

a fixture for constraining the workpiece;

a pivoting mechanism for rotating one of said carrier or workpiece about a pivot point, from a first angular position to a second angular position, during a forming

operation to create a formed axis that is non-coaxial with the non-processed axis of the workpiece; and

an axial drive mechanism for reciprocating one of said first and second rollers or workpiece along a spin axis to sequentially engage said first roller and then said second roller to the workpiece where said first roller and said second roller sequentially reduce the diameter of a portion of the workpiece during a forming pass.

2. (Original) The apparatus of claim 1, wherein said pivoting mechanism causes one of said carrier or workpiece to pivot at least once.

3. (Original) The apparatus of claim 1, wherein said pivoting mechanism causes one of said carrier or workpiece to pivot between forming passes.

4. (Original) The apparatus of claim 1, wherein said pivoting mechanism causes one of said carrier or workpiece to pivot within a plane containing the spin axis.

5. (Original) The apparatus of claim 1, wherein said pivoting mechanism pivots said fixture constraining the workpiece, said pivoting mechanism having an actuator pivotally attached to said fixture for rotating said fixture about a pivot point.

6. (Original) The apparatus of claim 5, wherein said actuator is a programmable actuator.

7. (Original) The apparatus of claim 1, further comprising a programmable controller, said controller operatively coupled to at least said radial drive mechanism, said pivoting mechanism and said axial drive mechanism to govern a forming operation to form a portion of the workpiece.

8. (Original) The apparatus of claim 6, wherein the formed axis is non-linear.

USSN10/688,266

9. (Original) The apparatus of claim 1, wherein the pivot point is fixed relative to the workpiece.

10.-15. (Canceled)